DOCUMENT RESUME

ED 420 805 CE 076 813

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TITLE Overseas Studies and Technology Education.
PUB DATE 1998-03-00
NOTE 15p.; Paper presented at the Annual Meeting of the International Technology Education Association (ITEA) (60th, Fort Worth, TX, March 8-10, 1998).
PUB TYPE Opinion Papers (120) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Curriculum Development; *Educational Benefits; *Educational Needs; Educational Objectives; *Educational Opportunities; Educational Trends; Global Approach; Higher Education; *Integrated Curriculum; Position Papers; *Study Abroad; Technological Literacy; *Technology Education; Trend Analysis

ABSTRACT

This paper analyzes and evaluates the role of technology education in overseas studies programs. Despite the realities of today's economics, relatively few U.S. students have or take the opportunity to study and travel abroad. Although some college faculty are concerned that study abroad programs might lead to lowering the academic standards of a particular course offering, evidence suggests that the experience of being abroad can improve a person's learning process. Many prestigious higher education institutions have sizable percentages of students who participate in at least one work or study program abroad. New technologies are the fabric of globalization; consequently, technology education simply cannot afford to ignore the phenomenon of globalization. Because current technologies are increasingly becoming international technologies, technology literacy now requires an understanding of the whole international environment in which technologies evolve. The following factors must be considered when developing overseas study curricula: marketability; costs; and general and specific interests. The way in which traditional study abroad programs are generally structured virtually excludes technology education from their curricula. Technology education professionals must develop a set of technology topics that should be explicitly considered in study abroad curricula. The challenge is to structure an experience that is educationally sound while remaining within the parameters set by the reality of the typical technology education student. (MN)

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ED 420 805

ITEA 60th ANNUAL CONFERENCE
FT. WORTH, TEXAS
March 8-10, 1998

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OVERSEAS STUDIES AND TECHNOLOGY EDUCATION

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INTRODUCTION

This work attempts to analyze and evaluate the role of Technology Education in Overseas Studies Programs. Aside from the economic and geopolitical implications, international education, particularly a study abroad experience, is regarded as providing both academic and character benefits.[1]

Our goal is to open the discussion about how can Overseas Studies Programs improve Technology Education and, vice versa, how can Technology Education enrich Overseas Studies Programs. The future of American businesses will benefit little

[1] Deutsch, S. (1970) **International Education and Exchange**. Cleveland: The Press of Case Western Reserve University. (p. 8-9).
Lambert, R.D. ((1989) **International Studies and the Undergraduate**. Washington, DC: American Council on Education. (p. 24).
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from increased international understanding if only French majors in Paris or art major in Florence have international experiences. Business, science, engineering students, as well as students in technology specialties should be brought into the pool.

1. STUDY ABROAD AND OVERSEAS STUDIES PROGRAMS

1.1. Development of programs.

a) The need of International Education.

Much is now being said about the pressing need to internationalize American education. The idea of internationalizing higher education is not a new phenomenon. United State policy makers perceived such a need in the late 50s after the frenzy over the Sputnik and the perceived threat of Soviet technology. More recently, the growing movement to internationalize the education of American students is driven in large measure by the recognition of increasing global interdependence.[2]

There are several possible strategies for internationalizing American education. One would be to increase the proportion of American Students who study abroad. Ideally, these programs should be coupled with lengthening durations of time abroad, integrating students into host country educational institutions and increasing study abroad outside Western Europe. This is not an option available or even appropriate to all students, although it is the most glamorous and perhaps most talked about strategy.

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[2] Council on International Education Exchange (1988) "Education for Global Competence: The Report of the Advisory Council for International Educational Exchange." New York, NY: Council on International Education Exchange.

b) Growth of the movement.

The number of American students studying abroad has grown steadily during the present decade and is now at a high of around 80,000, according to the Institute of International Education, the nation's leading educational exchange organization. However, this figure is small in comparison with the number of foreign students studying in the United States, around 450,000.

One sign of the growth is the number of study abroad programs now being offered. Ranging from a business and economics course at the University of Hungary in Pecs to another concentrating on language and culture at the leading university in Hanoi, Vietnam, these programs have virtually doubled during the 90s, from around 1,800 to around 3,800.

One important reason for the growth of interest in study abroad programs is that travel abroad has good word of mouth. It is a cliche, but over and over we could hear students saying that this experience has changed their lives.

1.2. Current situation.

a) Trends, successes, failures.

The role of overseas study options in the development of international studies programs varies considerably. At some institutions study abroad activity is handled separately from on-campus curricular issues. In other instances it is an integral part of an area or international studies program. Many institutions have organized their own programs overseas, while some encourage, or simply allow, their students to participate in programs organized by others.

Some of these programs fare better than others. Japan, for example, has proved especially tricky for American institutions. Of the more than 20 American college or university branches established during the 80s and early 90s at least

half have failed. All are said to have been victims of the economic recession in Japan. However, many other overlooked factors could be affecting the failure or success in Japan.

Despite the realities of today's economics, relatively few American students have or take the opportunity to study or even travel abroad. Nevertheless, significantly, the profile of these itinerant American students has changed. Typically, they used to be affluent women in their junior year at one of the elite colleges and they would be studying architecture and/or French in Paris. Nowadays, more of them tend to be male, they are less likely to be affluent, they may be interested in business or industry and there is a slight shift away from Europe as their destination.

Of course, there are many critics of these study abroad experiences. Mainly, they are saying that there is a great deal of wishful thinking in the notion that a course, a semester or even a year of study abroad is going to make a student into an internationalist. Some believe that not much useful can be learned in the format of "it is Tuesday, this must be Frankfurt."

Some professors are concerned that study abroad programs might lead to lowering the academic standards of a particular course offering. But, a valid argument can be made that the level of intellectual growth that can occur within this framework is generally superior to that possible with the physically and psychologically limiting confines of a traditional classroom.

There are indications that the experience of just being abroad makes a difference in a person's learning process. All we can do with study abroad programs, as with any other pedagogical approach, is that entices the student to look further and deeper into a subject. The student who has participated in a study abroad program will likely enlarge the number of questions to pursue later;

this would be more than enough to justify these kind of programs.

b) Specific cases

At an elite institution like Harvard University, 51 percent of the undergraduates participate in at least one work or study program abroad.

At Kalamazoo College, a small selective liberal arts school in Kalamazoo, Michigan, 85 percent of the students study overseas, thanks to a private gift of more than five million dollars that subsidizes travel and on-site living expenses.

Several American colleges and universities have established campuses in foreign countries so that students may spend extended periods abroad and earn credits readily accepted by employers and graduate schools in the United States.

Webster University in St. Louis, for example, operates wholly owned branches in Geneva, London, Vienna, and the Dutch city of Leiden. Emerson College, a small liberal arts school in Boston has established a branch in Maastricht, the Netherlands, where students study subjects such as global marketing, communications and advertising.

Stanford University's Overseas Study Program has a strong tradition of success. Its permanent programs in England, Italy, and Japan offer standard course offerings for the undergraduate curriculum. During the 90s, it has added a program in Chile and is planning a new one in Mexico. When surveying the senior class over the last few years, the question was asked about what was the most meaningful experience during their undergraduate years. More than 87 percent of those who participated in the Stanford study abroad program gave that the highest rating.

2. TECHNOLOGY EDUCATION FOR ALL EVERYPLACE

2.1. International Technology Issues.

a) Technology and Globalization.

Globalization is the concept used by those involved in international issues in business, government, and academia in order to characterize the present evolution of international events. The concept implies global connectivity and interdependence. The main force accompanying if not driving this phenomenon is technology development. New technologies are the fabrics of this globalization process.

If this is the case, technology education simply cannot afford to ignore the phenomenon of globalization. Technologies are globalizing the planet and technologies are global. This is a fact that should be consider in the teaching of technology issues from the very beginning.

b) Technology and Culture.

We have to realize that present technology graduates likely will either supervise or be supervised by someone of another race, ethnicity, or nationality, and that their careers and lives as citizens will be affected by international and intercultural life.

Students are realizing that the more different environments a person moves into, the more the person will learn. Conversely, the more we study with people just like ourselves, the less we learn. This is also the case with technology education students.

2.2. The study of technology and international issues.

a) Technology literacy.

We know that today literacy is more than writing, reading, and arithmetics. It requires also technology understanding. But, current technologies are becoming increasingly international technologies. In addition to the economical and political factors that determine the actual world wide extent of technologies, new technologies by themselves requires the whole planet in order to develop their whole potential. The best example is modern telecommunication technologies and the multiple relation to other modern technologies.

This observation implies that technology literacy today requires an understanding of the whole international environment in which a technology will evolve and develop all its possibilities.

b) Technology in a Global Society.

Globalization means the emergence of problems that by their own nature are global. Examples could go from global warming, to drugs, to finance. Being of the very nature of the technology method the solving problem mentality, it is obvious that more and more of the problems that technologists will face in the future will be global ones. In other words, more and more the new technologies will be for the global society and not just for the local environment in which the technologists are located.

c) Technology business.

Corporate executives, as well as government officials, tell us that the students they hire need to know how to think and act flexibly and strategically, how to move readily from one project and region to another, how to grasp a new situation quickly, and how to start solving pragmatic problems. The ability to think globally and act locally, as manager of high-tech corporation tell their

employees, is particularly important now, because information about business risks and opportunities circulates freely, instantaneously, and without regard to national boundaries, often limiting the time available to make decisions.

Alert, job oriented students have come to realize that as the world shrinks, many of the best jobs are going to go to graduates who possesses international skills.

3. CURRICULUM ISSUES

3.1. Factors affecting Overseas Studies Curriculum.

a) Marketability.

One of the major issues in study abroad programs is the challenge of legitimizing it as an acceptable educational alternative, not defining it as a luxury vacation. This could lead to elevate the course requirements, making the program intimidating to students. Hopefully, as programs become institutionalized students may realize that the assignments are meant to provide a context that can enhance appreciation and understanding of the experience. Allowing both routes, credit and non-credit enrollment, it appears to be a good idea.

Required courses in study abroad programs stress the traditional offering in liberal arts education. However, alumni and some current students are urging professors to design new courses on the practical aspects of foreign business.

Examination of the incentives for students to plan overseas study and, more important, relating the incentives to area and/or international studies program requirements on campus can only strengthen a developing program.

b) Costs.

Cost is a drawback for study abroad programs. A one to two weeks course cost between $1,300 and $3,500. Therefore, money is somewhat of an obstacle, though probably not the major one if the program has worked out a realistic financing approach.

The more significant obstacle is time. Most of the traditional study abroad programs last six to eight weeks. In technology education programs we have many working students or young parents to whom this time frame is prohibitive. Hence, when planning study abroad program for technology education students, time costs should be a major factor of the feasibility study because it can easily be higher than the money cost of the project.

c) General and specific interests.

One of the main challenges of a study abroad program is to design a curriculum capable of addressing the needs and expectations of students with very different interests. Some students see the overseas experience as the opportunity to have a broad and big picture of what is out of the country. To other is the chance of fulfilling a very specific interest long lying in their mind. It is not possible to design a one size fix all curriculum; therefore, some compromise will occur.

This is a very critical issue for technology education because by its own nature this education is more focused than traditional study abroad curricula. These curricula tends to cover a very broad spectrum of cultural issues that could be intimidating or a disincentive to the typical technology student. This problem implies that study abroad curricula for technology education will require a different and specific kind of compromises.

3.2. Technology Education and curriculum.

a) Lack of presence.

Traditional study abroad programs are generally structured in such a way as to virtually exclude technology education in their curricula. There is a lack of technology education both because of the absence of explicit courses in the field and the absence of explicit references to technology issues in their curricula.

b) Implicit presence.

Several of the topics that traditional study abroad programs study have a big technological component. For example, studies about the economy and business practices necessarily will demand the consideration of many technological issues.

This is a factor that could be emphasized in order to make more explicit the need for technology education even in the event of traditional study abroad curricula.

c) Specific need.

i) Technology and cultural awareness.

Corporate executives and government officials are less interested today in in-depth knowledge about specific countries per se and more interested in problems associated with the challenges of building more effective social, economic, and political systems. Consequently, the focus of traditional international education is shifting from the in depth study of a culture to more comprehensive studies on how the culture, history, and language of an area shape its response to broader changes, such as the evolution of market based economies given the global technologization.

To respond to such challenges, those who finance international programs are turning their attention from traditional international studies programs to

problem-focused programs. Study abroad programs can prosper if they adjust to these challenges. Indeed, the need for such programs is likely to increase in the year to come. As more Americans become involved in the changing economic, political, social, and cultural sector of societies abroad, we will need experts in a growing number of specific areas. Technology education can make a difference.

ii) Specific technology topics.

Technology education professionals should develop a set of technology topics that explicitly should be considered in study abroad curricula. Some of these topics could be related to specific technologies, e.g. telecommunications. However, technology education could also make a contribution in methods and approaches to study and analyze issues in an international context.

4. FUTURE DEVELOPMENTS

4.1. Strategies for Technology Education presence.

a) Involvement in the International curriculum.

The first step is to get technology education professionals involved in study abroad programs. From within, these professionals would be in a position for incorporating, with knowledge and authority, technology education in the main frame of study abroad curricula. From this position they will be also in condition of advising technology students about study abroad possibilities.

While allowing technology students to participate in overseas programs organized by non-technology education programs could be a good arrangement, it also can lead to problems in credit transfers and scheduling. This approach it also requires considerable student initiative.

b) International Technology Education programs.

In this case, the possibility of study abroad technology education programs should be considered. There is very little experience in America and abroad about this kind of programs. However, there is a great deal of experience in training in the business community. Learning from these training experiences and traditional study abroad programs, it would be possible to develop some specific programs for overseas technology education.

4.2. The challenge for Technology Education.

a) Technology for a Global society.

At this time most American students in study abroad program are traditional students. They are young, full time students working on a bachelor degree in a traditional liberal art and science curricula. We have to stress the importance of technology education in reaching "non-traditional" students. They could be of any age, working full or part time on different kind of degrees in a professionally oriented curricula.

b) Culturally open curriculum.

A culturally open curriculum means that traditional study abroad program will need to open their curricula to the consideration of technology education abroad. Technology is part of the culture; therefore, any serious study of foreign cultures should consider the technological dimension of such a culture.

On the other hand, any overseas technology education should address the cultural environment fully and in-depth. Technical training teaches operation, technology education teaches how a society embrace a technology.

4.3. Specific propositions.

a) Traditional Overseas Study programs.

i) Participation in overseas study programs as they are.

The goal is to study the possibilities of incorporating technology education in those programs.

ii) To incorporate technology education in some overseas programs.

The challenge is to negotiate specific propositions in order to incorporate technology education in the curriculum.

b) Oriented Overseas Study programs.

Technology education programs with big student populations could develop overseas programs open to small program and traditional students attracted to the idea of technology oriented overseas studies.

CONCLUSIONS

When the global economy drives corporate leaders to say they want to hire people, even in very technical positions, with foreign language skills and knowledge of foreign cultures, and that all things being equal they will hire them first, that is when the rush will begin for technology education with international background.

The factors that the technology education student must consider in making study and travel abroad decisions are different from those significant for most traditional study abroad students. However, the technology student is typical of the Americans who must be reached by global education programs if any progress is to be made in better preparing Americans for the global marketplace. While some compromises have to be made and modifications of traditional programs seem necessary, there are no insurmountable obstacles. The challenge is to structure

an experience that would be educationally sound and yet remain within the parameters set by the reality of a typical technology education student.

Certainly, Study Abroad programs are not for everybody and are not appropriate to everybody. Yet, these programs are here to stay and Technology Education scholars have to be part of this movement. The real questions are how and how much to be involve. Leaders in government, foundations, and universities now are struggling to develop programs and budgets that will respond to the complex new international realities. It is critical for those of us who are committed to technology education to recognize the need to be involved. We must identify and then build on experiments currently under way at institutions of higher education and at the same time devise our own creative responses. We hope to open the debate on the issue and initiate a constructive work on this concern.